Appendix A

Heat Stress Work Limit Guidelines

Appendix A

Heat Stress Work Limit Guidelines*

Coverall Clothing			Respiratory Protection			
Cloth	Tyvek	Acid suit	Negative Pressure	Air Supplied	Area Temperature	Work Stay Time
1 cloth	with or without tyvek	acid suit		air hood	70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	2.0 hours 1.5 hours 1.0 hours 30 minutes 15 minutes 10 minutes
1 cloth	1 or 2 tyvek				70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	1 hr 45 minutes 1 hr 15 minutes 45 minutes 30 minutes 15 minutes 10 minutes
2 cloth	1 or 2 tyvek			full face airline respirator	70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	1 hr 15 minutes 1 hour 30 minutes 20 minutes 15 minutes 10 minutes
1 cloth	with or without tyvek	acid suit		full face airline respirator	70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	1 hr 15 minutes 45 minutes 30 minutes 20 minutes 15 minutes 10 minutes
1 cloth					less than 100° F 100 - 110° F 110 - 120° F 120 - 130° F	see attach. II 2 hours 1 hour 30 minutes
1 cloth	1 tyvek				70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	2.5 hours 2 hours 1.5 hours 1 hour 30 minutes 20 minutes
1 cloth	2 tyvek				70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	2 hours 1.5 hours 1 hour 30 minutes 15 minutes 10 minutes

Appendix A Heat Stress Work Limit Guidelines* (Continued)

Coverall Clothing			Respiratory Protection			
Cloth	Tyvek	Acid Suit	Negative Pressure	Air Supplied	Area Temperature	Work Stay Time
1 cloth	with or without tyvek	acid suit			70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	1.5 hours 1 hour 45 minutes 30 minutes 15 minutes 10 minutes
1 cloth	1 or 2 tyvek		full face respirator		70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	1.5 hours 1 hour 45 minutes 20 minutes 15 minutes 10 minutes
2 cloth	2 tyvek		full face respirator		70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	1 hour 45 minutes 25 minutes 15 minutes 10 minutes 5 minutes
1 cloth	with or without tyvek	acid suit	full face respirator		70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	45 minutes 30 minutes 20 minutes 15 minutes 10 minutes 5 minutes
1 cloth	1 tyvek			bubble suit	70 - 80° F 80 - 90° F 90 - 100° F 100 - 110° F 110 - 120° F 120 - 130° F	3 hours 2 hours 1 hour 45 minutes 20 minutes 10 minutes

PROTECTIVE EQUIPMENT	TEMPERATURE (DRY BULB)	GUIDELINES FOR WORK TIMES
Any of the clothing previously listed, if worn with an ice vest, will increase the work stay times to those listed. After the ice in the vest has melted, no further cooling will be provided.	80 - 90° F 90 - 100° F 100 - 110° F 110 - 120 °F 120 - 130 °F	1.5 hours 80 minutes 1 hour 45 minutes 30 minutes

*These guidelines apply to moderate work activity and do not include dress time less than 15 minutes. These are guidelines and not absolute standards which will assure no adverse health effects. If at any time someone has any heat stress difficulties, he/she is to be referred to the INEL Occupational Medical Program physician for evaluation.

These guidelines may be exceeded on a case by case basis provided the following precautions are taken.

1. The status of the employees condition is evaluated continually and no problems are apparent.
2. A buddy system is utilized and continual communication is maintained.
3. Hazardous conditions such as height, confined space, exposure to chemicals and electrical equipment are taken into account and reliable egress is ensured.

Entries into the work area may be repeated as long as cool down periods are used. As a guideline, cool down periods should be at least 30 minutes or half the entry time, whichever is longer. Work can be done during the cool down as long as it is not physically demanding and in a "cool" area. Water must be made available in the cool down area.

Appendix B

PPE Donning Guidelines

Appendix B

Anti-C Clothing Donning

1. Green modesty clothing
2. Safety shoes
3. Shoe covers taped at heel to each safety shoe
4. Yellow cloth coveralls with stirrups over shoe covers and neck cord tied in slip knot, dosimetry will be placed as per HP instructions
5. Plastic booties or 16" x 20" plastic bags taped at top to cloth coveralls
6. Second pair of shoe covers taped at heel and around arch
7. Cloth glove liners
8. Pair of yellow rubber gloves with top cuff taped to cloth coveralls
9. Tyvek coveralls and/or wet suits. Secure zipper in the up position with a piece of tape. Wet suits may be worn with, or instead of the tyvek coverall. Insure that tyvek or wet suits is large enough so that the sleeves or legs are not pulled up while stretching or reaching.
10. Second set of yellow rubber gloves. Insure that they are large enough or cramping of the hands may occur.
11. Rubber boots.
11. Surgeons cap.
12. Respirator (HP must be observing when respirator is donned).
13. Cloth hood (taped at velcro seam, around respirator visor, and bottom of hood taped to cloth coveralls).

NOTES:

1. Insure that all tapes are tabbed to facilitate easy removal of tape and that encircling bands of tape are loose enough to provide for proper circulation.
2. TLD and SRD will be worn in pocket of yellow cloth coveralls.
3. If a respirator is not required the cloth hood maybe worn with a single piece of tape down the velcro seam ending on the tyvek coveralls.
4. If long periods of time are going to be spent working in a kneeling position, the knees of the tyvek coverall shall be reinforced by taping a shoe cover or other suitable means of reinforcement over each knee. Wet suits may be used with or instead of tyvek coverall and the knees may need to be protected.
5. Modesty clothing, surgeons cap, cloth glove liners, and safety shoes are not considered to be anti-c clothing.
6. Hard hats may be required. The hat will be placed on the head over the cloth hood and held in place by a chin strap. The hard hat must not interfere with the full face respirator fit or vision.

Appendix C

Personnel Decontamination Procedure For

Hazardous Waste Operations

Appendix C

Personnel Decontamination Procedure

All articles, as they are removed, will be placed into the proper receptacles. The proper receptacles designation for each article is abbreviated within the parentheses following each article. Combustible waste is abbreviated as (CB), compactible waste as (CP), noncompactible waste as (NC), launderable protective clothing as (L) and respirator as (R).

PPE will be removed according to the following procedure. A copy of PPE Removal instructions will be prominently posted near the personnel decontamination area.

Anti-C Doffing Requirements

1. Remove rubber boots.
2. Remove outer rubber gloves.
3. Remove tape from around respirator, if respirator is used.
4. Remove tyvek coverall and/or wet suit.
5. Tilt head back and remove cloth hood with one hand.
6. Tilt head over receptacle or bag and remove respirator (HP will assist). HP will assist in recovery of glasses.
7. Remove skull cap.
8. Remove plastic boots while stepping out of contamination area keeping hands within the barrier.
9. Remove rubber gloves.
10. HP will remove dosimetry.
11. Remove cloth coveralls.

12. Remove last pair of shoecovers while stepping out of stepout area.

13. HP will perform whole body survey.

14. Go directly to support trailer.

NOTES:

1. Insure that all tapes are tabbed to facilitate easy removal of tape and that encircling bands of tape are loose enough to provide for proper circulation.
2. TLD and SRD will be worn in pocket of yellow cloth coveralls.
3. If a respirator is not required the cloth hood maybe worn with a single piece of tape down the velcro seam ending on the tyvek coveralls.
4. If long periods of time are going to be spent working in a kneeling position, the knees of the tyvek coverall shall be reinforced by taping a shoe cover or other suitable means of reinforcement over each knee. Wet suits may be used with or instead of tyvek coverall and the knees may need to be protected.
5. Modesty clothing, surgeons cap, cloth glove liners, and safety shoes are not considered to be anti-c clothing.
6. Hard hats may be required. The hat will be placed on the head over the cloth hood and held in place by a chin strap. The hard hat must not interfere with the full face respirator fit or vision.

If a person is injured or becomes ill, the situation will be evaluated by first aid personnel on the task site. Emergency care will be initiated and if the injury/illness is serious, the person will be evacuated from the work area to the dispensary located in Bldg. 752. **Medical care for serious injury/illness will NOT be delayed for decontamination.** The nearest designated trauma center is Eastern Idaho Regional Medical Center located at Idaho Falls, phone: 529-6000. In such cases, gross contamination may be removed by removal of the injured person's outer protective gear (if possible). Additional decontamination may be performed at the medical

facility. The HP technician must accompany the employee to the medical facility to provide information and decontamination assistance to medical personnel.

Appendix D

Field Change Authorization Form

FIELD CHANGE PROCEDURE

DATE	TIME	AUTHOR	Page _____ of _____ add sheets if necessary

Description of Desired Change

Justification for Change

Impacts to Technical Work Plan

Impacts to Health and Safety

Impacts to Scope of Work

Approvals:		
ETAS Field Operation Officer	ETAS Health & Safety Officer	ETAS Project Manager
ANL-W Construction Mgt.	ANL-W Health & Safety Officer	ANL-W Project Manager

ADDENDUM 1

This addendum identifies an organizational change by ETAS Corporation. The change is as follows:

Mr. Gerald Bartz and Dr. Stanley Heath have comparable qualifications, and as such, positions are interchangeable. Accordingly, Mr. Bartz can is qualified to act as both the Health and Safety Officer and the Quality Assurance Officer. In a like manner, Dr. Heath is also qualified to act in both positions.

Upon arrival of Dr. Heath will assume the duties of the Health and Safety Officer and Mr. Bartz will devote his efforts to the duties of the Quality Assurance Officer.